Neutrino Physics Center Fellowship Award

Carlos Javier Solano Salinas

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ABSTRACTS

This research project is to collaborate in the MINERvA Neutrino-Nucleus interactions experiment at FERMILAB, working mostly with J. Morfin and my master student E. Chavarria.

Test Beam is a scaled-down replica of the solid scintillator tracking and sampling calorimeter regions of the MINERvA detector in a hadron test beam at the Fermilab Test Beam Facility. These measurements are used to tune the MINERvA detector simulation and evaluate systematic uncertainties in support of the MINERvA neutrino cross-section measurement program.

An upgrade and improvement of this system is the **Test Beam II**

We will concentrate during my stay in the Calibration work. One particular case is in the gains of the PMTs. It is well-known that some scintillator detectors are quite sensible to changes in room temperature. By the same token, PMT(cathode) as well. In this study, we will try to quantify how small changes in temperature may change the gains of the PMT. A next step would be to propose how to reduce these changes.
We will work as well with my student, Edgar Chavarria, in the writing of his master thesis. His thesis is mostly concentrated in the Test Beam II data analysis for calibrations.